

Three new species of Coraebini Bedel, 1921 (Coleoptera: Buprestidae: Agrilinae) from the Leyte Island, Philippines¹

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Abstract

Three new species of Coraebini (Coleoptera: Buprestidae: Agrilinae, subtribes Coraebina and Toxoscelina) from the Philippine island of Leyte are described: the tenth species of *Coraebosoma* Obenberger, 1923: *C. viridis*; the second species of *Lumawigia* Bellamy, 2005: *L. leytensis*; and the third species of *Philippscelus* Bellamy, 1998: *P. gracilis*. All three are distinguished from their congeners in new or modified keys and illustrated with color photographs of the respective dorsal habitus and male genitalia.

Key words: Coleoptera, Buprestidae, *Coraebosoma*, *Lumawigia*, *Philippscelus*, new species, Philippines, Leyte, keys

Introduction

This paper, our first collaborative work on the Philippine Coraebini Bedel, 1921 (Coleoptera: Buprestidae: Agrilinae), represents the eighth contribution to the modern understanding of that regional fauna (Bellamy 1990a, 1990b, 1991a, 1991b, 1998, 2005; Ohmomo 2002). New taxa from the genera *Coraebosoma* Obenberger, 1923, *Lumawigia* Bellamy, 2005 and *Philippscelus* Bellamy, 2005 are available for description now, while other new Philippine species of Coraebini are accumulating for future descriptive papers. Although listed alphabetically above, these three genera will be discussed in a systematic sequence (see Kubáň, *et al.*, 2001) below.

As the data on the Philippine taxa of the Coraebini continue to accumulate, it is clear that for members of this tribe, speciation events have occurred between populations distributed, by whatever vicariant situations are involved, between the large islands, often without respect to the distance or proximity of these islands, e.g. Leyte and Samar. There has been insufficient sampling and collecting in the small peripheral islands closer to any of these larger islands, e.g. Leyte, Luzon, Mindanao, Mindoro, etc. There is literature on plants, marine invertebrates, reptile, bird, and mammal biogeography and endemism in the Philippines and recent molecular data to support earlier morphological studies (Curio, 2002; Peterson, *et al.*, 2000; Roberts, 2006; Tan, 1986), but for the insects, nothing much yet. Such data are informative and useful to growing efforts to establish conservation priorities for the special biota of the Philippine archipelago (see Conservation International, 2008).

Specimens from the respective type series are deposited in the following collections: BLCW—B. Levey collection, Cardiff, Wales; CSCA—California State Collection of Arthropods, Sacramento; COTJ—S. Ohmomo collection, Tsukuba, Japan; and CLBC—C. L. Bellamy research collection, Sacramento, California. The descriptions of the new species herein follow the formats used in the previous respective descriptions or

1. Eighth contribution to knowledge of Philippine Coraebini

revisions of these genera (Bellamy, 1990b, 1998, 2005) focusing on what are clearly inter-species character states. A modified key to the species of *Coraebosoma* includes the two species described since the revision (Bellamy, 1990b). New keys to the two species of *Lumawigia* and three species of *Philippscelus* are presented.

Full synonymies for the genus-group names can be found in Bellamy (2003) and are not repeated herein. Label data is verbatim with additional or orthographic information given in parentheses. A seemingly common place-name is the primary locality data point for the three new species described below. The specimens were collected by local people and distributed by commercial insect dealers in the Philippines and elsewhere. The data that accompanied the specimens are presented exactly as received. Place name orthography was checked using the GEOnet Names Server (GNS) (2009) and geographic coordinates determined via Google Earth (2009) for the following primary place names: Balocawe: 10° 42' 43.02"N 125° 57' 39.10"E, Mt. Balocawe: 10° 44' 23.80"N 124° 58' 34.31, Hilusig: 10° 44' 59.98"N 124° 59' 59.95 and Mahaplag: 10° 36' 21.07"N 124° 58' 26.26'E. As given in the accompanying imprecise data with the specimens is the spelling 'Mt. Balocawe', which according to GNS, the standard spelling is "Mt. Balocawe". The data given are "Leyte Island, Mahaplag, Hilusig, Mt. Balocawe". This appears to have become the locality for a wide range of biological specimens, as we note in a paper on Platystictidae (Odonata) by van Tol (2005). However, this is very misleading and inaccurate as Hilusig is some distance nearly due east of Mt. Balocawe, while Mahaplag is found along a river to the south of the mountain.

Subfamily Agrilinae Laporte, 1835

Tribe Coraebini Bedel, 1921

Subtribe Toxoscelina Majer in Kubáň, et al., 2001

Genus *Lumawigia* Bellamy, 2005

Lumawigia Bellamy, 2005: 31.

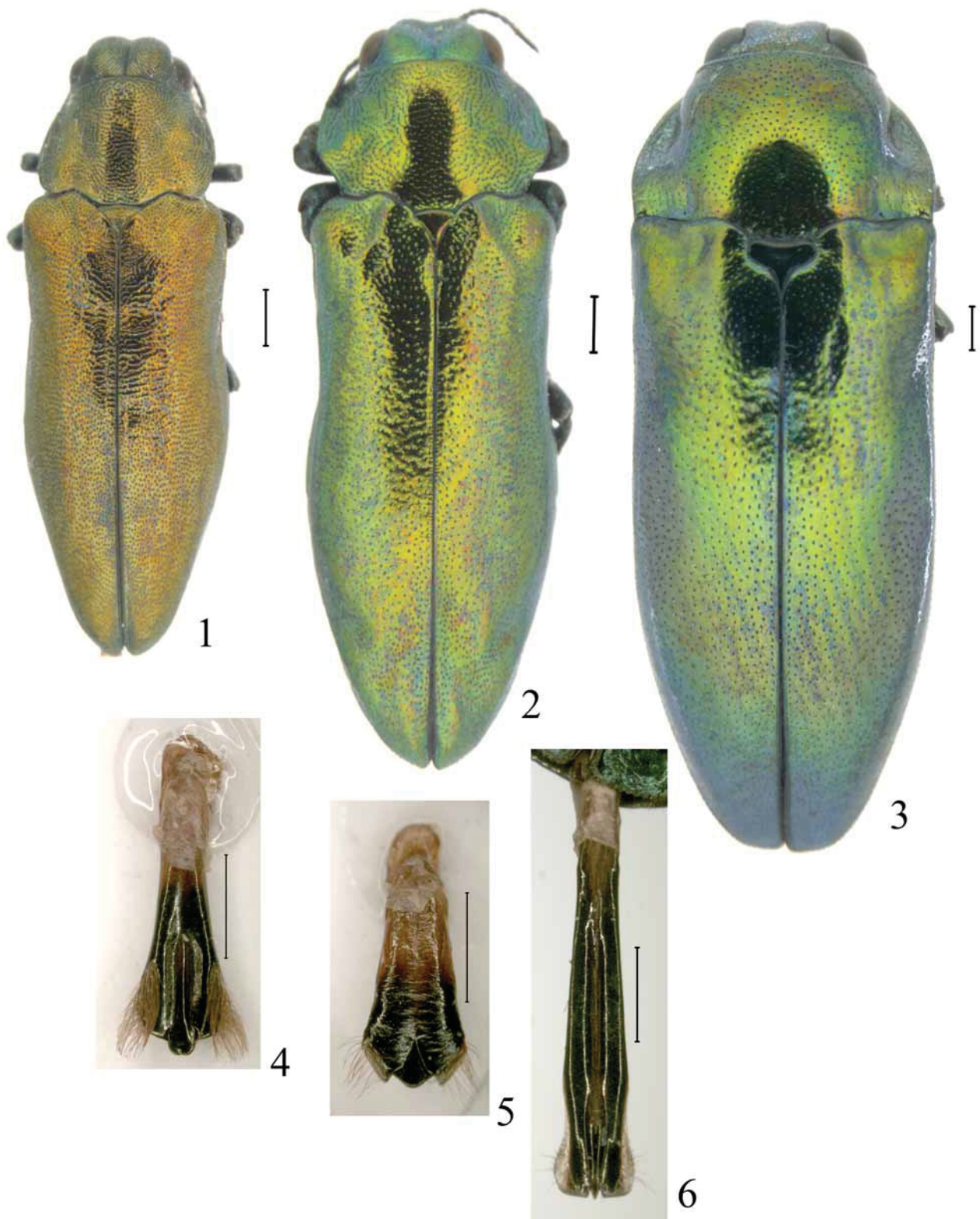
Type species: *Lumawigia gibbicephala* Bellamy, 2005 (fixed by original designation).

***Lumawigia leytensis*, sp. nov.**

(Figs. 1, 4)

Description (♂ holotype). Elongate, subcylindrical; 10.5 mm in length from head to elytral apex, 3.6 mm in width between elytral margins opposite humeri; surface transversely rugulose, glabrous; integument iridescent, strong aeneous reflection with a dull green lustre, legs black with faint blue-green reflection. Head: frontovertex longitudinally depressed, projecting beyond anterior margin of eye; eyes relatively small, inner margins diverging dorsally, circumocular groove wide, entire; transverse preantennal groove entire; antennal cavities large, subcontiguous, closer to each other than diameter of cavity; frontoclypeus narrow, with two short parallel carinae between antennae, one on either side, narrow medially, widening slightly distally; distal margin narrow, subconvex; gena posterior to eye with oblique depression to receive basal antennomeres in repose; antennae relatively short, not reaching anterior 1/3 of pronotum; serrate from antennomere 5, antennomere 1 very stout, length subequal to 2+3+4, arcuate distally; 2 shorter, swollen, longer than 3 or 4, 3 smaller, more slender, shorter than 4, 4 slightly swollen distally; 5 triangular, longer than wide, 6 with length and width subequal, 7–10 each slightly more wide than long than preceeding; 11 oblong, arcuate distally. Pronotum narrowed in anterior 1/3, expanded in posterior 2/3, widest at about posterior 1/3; disc entire, rounded laterally; prelateral carina on either side not extending to either anterior or posterior margins; anterior margin strongly arcuate medially, posterior margin bisinuate, lateral margin biangulate, carina entire. Scutellum triangular, anterior margin convex, slightly overlapping adjacent pronotal area, lateral margins

concave. Elytra wider than pronotum, widest opposite humeri; posterior to humeri lateral margin very gradually narrowing to about midpoint before gradually widening to posterior 1/3, then narrowing more strongly to separately attenuate apices; disc entire; lateroposterior margin serrulate; epipleuron short, extending only to opposite mesepimeron. Pygidium not visible posterior to elytral apices. Prosternum with strongly projecting broad, feebly bilobed ‘mentonniere’, notched laterally for antennomeres in repose; process



FIGURES 1–6. 1–3, dorsal habitus; 4–6, male genitalia, dorsal aspect; 1, 4—*Lumawigia leytensis*, sp. nov.; 2, 5—*Philippscelus gracilis*, sp. nov.; 3, 6—*Coraebosoma viridis* sp. nov. Scale bars = 1.0 mm.

slightly expanded posterior to procoxae, then narrowing sharply to rounded attenuate apex; abdominal ventrites 1, 2 subequal in length, longer than 3–5; 3, 4 subequal, each shorter than 5; 5 broadly arcuate apically; 1, 2 expanded laterally, visible from above lateral to elytral margins. Legs with pro- and mesotibiae arcuate; tarsi with pulvilli on tarsomeres 1–4; claws appendiculate. Male genitalia as in Fig. 4.

Variation. There is no obvious sexual dichromatism or dimorphism. From the overall bronze of Fig. 1, the color varies to bronze with a green tint to a stronger blue green, and is likely the result of the chemicals used to kill and preserve the specimens. The type series varies in size as follows: ♂♂ (n = 22), length 9.5–10.3 mm, width 3.2–3.5 mm and ♀♀ (n = 4), 10.7–12.0 mm, width 3.6–4.0 mm.

Specimens examined. Holotype, ♂ (CSCA): **PHILIPPINES**, Leyte Is(land), Mt. Balocaue (Balocawe), Mahaplag, 15–27.iv.2009, local collector; 25 paratypes: 2 ♂♂, 1 ♀, same data as holotype; 1 ♂: same data except Mt. Balocaue, 1–4.viii.2009; 1 ♂, same data except vi.2009; 9 ♂♂, 1 ♀, 2006.4, Mt. Balcaue (sic!), Leyte, Philippines, D. Mohagan leg.; 2 ♂♂, same data except June–Aug. 2006; 2 ♂♂, 1 ♀, same data except 2006.08; 4 ♂♂, 1 ♀, Leyte Is., Mahaplag, Hilusig, Mt. Balocaue, August 2009. Paratypes are deposited in CLBC and COTJ.

Etymology. The name for this species is obviously for the island of Leyte, in the southeast of the Philippine archipelago.

Remarks. This new species can immediately be separated from the generic type-species *L. gibbicephala* by being smaller (length: ca. 9.5–11.0 mm), bronze, green to blue-green and is from Leyte, while *L. gibbicephala* is larger (length: 14.0 mm), purple and is from northern Luzon.

A key to the species of the Philippine coraebine genus *Lumawigia*

1. Dorsal integument entirely bronze, green to blue-green; smaller (length: 9.5–12.0 mm)...(Leyte).....*L. leytensis*, sp. nov.
- Dorsal integument with head, pronotum black with blue highlights and elytra purple; slightly larger (length: 14.0 mm)... (Luzon).....*L. gibbicephala*

Genus *Philippuscelus* Bellamy, 1998

Philippuscelus, *Philippuscelis* Bellamy, 1998: 115; 2003: 78 (multiple original spelling).

Type species: *Polyonychus fisheri* Hoscheck, 1931 (fixed by original designation).

Philippuscelus Bellamy, 2005: 30 (justified emendation).

Philippuscelus gracilis, sp. nov.

(Figs. 2, 5)

Description (♂ holotype). Elongate-ovoid, subcylindrical, flattened above and below; length from head to elytral apex 12.7 mm, width 4.2 mm, widest at about elytral posterior 1/2; dorsal coloration iridescent green with faint blue tint laterally and the distal 1/3 of elytra slightly strong blue-green; ventral coloration green with moderate golden tint below, except prosternum which is black except for green disc, and narrow band of cupreous reflection along extreme edge of mesepisternum, mesepimeron, metacoxal plate and anterior abdominal segments just beyond elytral lateral margin; hypomeron black with blue green tint; dorsal surface transversely striolate-rugose, except median portion of pronotum and elytral which are sparsely, very shallowly punctate; ventral surface imbricate; entire surface glabrous except short, sparse, adpressed, fine setae well-spaced along ventral imbrications. Head: frontovertex very feebly depressed between eyes dorsally and feebly, irregularly projecting between ventral half of eyes; eyes large, inner margins feebly diverging dorsally; circumocular groove extends from behind eye both dorsal and ventral and all around front;

frontoclypeus strongly compressed between antennal insertions, distal margin feebly concave, explanate; supra-antennal grooves contiguous, connecting with central longitudinal depression of frontoclypeus; gena without any projecting lobe, with short obtuse depression beneath eye to receive basal antennomeres in repose. Antennae short, antennomere 2 longer than 3; 3, 4 subequal, serrate from antennomere 5; 6–10 wider than long; 11 oblong, entire. Pronotum: wider than long, widest at basal 1/3; disc entire, only slightly convex medially, lateral portions somewhat explanate; anterior margin arcuate; basal margin bisinuate; basolateral angle obtuse; lateral margin arcuately emarginate in basal 1/3 to angulate projection, then narrowing slightly to before anterior 1/3 and then feebly arcuately convex to anterior margin. Elytra: disc entire, evenly transverse; slight basal depression between humerus and scutellum; posterolateral margin serrulate; slight pre-apical depression inside and posterior to two short, subparallel, longitudinal costae midway between suture and lateral margin at about middle of length of posterior 1/2; lateroapical margin finely dentate; apical angles subattenuate, separately rounded; epipleuron short, ventrally deflexed, extending only to opposite mesepimeron. Pygidium not visible posterior to elytral apices. Thoracic ventrites: prosternum with moderately produced, feebly bilobed mentonniere, two lobes widely spaced, slightly angularly produced; process subparallel, lateral margins converging posteriorly; mesepimeron partially visible beyond basal abdominal projection; metacoxal plate with anterior margin strongly sinuate. Abdominal ventrites: suture between ventrites 1 and 2 only indicated laterally; distal margin of ventrite 5 finely dentate. Legs: femora fusiform; pro- and mesotibiae feebly arcuate; metatibia straight along internal margin, external margin widest proximally before narrowing to slight concave depression, then straight to apex, setal comb present on external margin from before proximal 1/3, extending to beyond distal 1/3; tarsomeres 1–4 each slightly shorter than preceding, each with ventral pulvillus; 5 elongate, length equal to 2 + 3 + 4, claws bifid. Male genitalia as in Fig. 5.

Variation. There is no obvious sexual dichromatism or dimorphism. Color varies slightly from the holotype to include specimens that tend to a golden green reflection dorsally. The type series varies in size as follows: ♂♂ (n = 19), length 12.1–13.5 mm, width 4.0–4.3 mm and ♀♀ (n = 7), length 13.2–14.5 mm, width 4.3–4.8 mm.

Specimens examined. Holotype, ♂ (CSCA): **PHILIPPINES**, Leyte Is(land), Mt. Balocaue (Balocawe), 2006.08, D. Mohagan leg.; 27 paratypes: 4 ♂♂, same data as holotype; 2 ♂♂, 2 ♀♀, same data except 2006.4; 1 ♂, 1 ♀, same data except June–Aug., 2006; 2 unsexed, Mt. Balocaue, vi.2006; 1 ♀, Mt. Balocaue, Mahaplag, 5–10.iv.2009, local collector; 2 ♂♂, same data except 15–27.iv.2009; 2 ♂♂, Mt. Balocaue, 9.vi.2009; 1 ♂, same data except 15–19.vi.2009; 2 ♂♂, 2 ♀♀, Mt. Balocaue, vi.2009; 4 ♂♂, 1 ♀, Leyte Is., Mahaplag, Hilusig, Mt. Balocaue, August 2009. Paratypes are deposited in BLCW, CLBC and COTJ.

Etymology. This new species' name is from the Latin for 'slender,' to mark the most obvious diagnostic feature that separates it from the two congeners.

Remarks. This is the first species of *Philippuscelus* that lacks the entire transverse, strongly rugose elytral disc. Instead *P. gracilis* has the lateral portion of the elytral disc moderately rugose and the median portion is simply punctate. The three species of *Philippuscelus* can be distinguished in the key below.

A key to the species of *Philippuscelus*

- | | | |
|----|--------------------------------------------------------------------------------------------------|-------------------------------|
| 1. | Dorsal integument green..... | 2 |
| | Dorsal integument black ... (Panay)..... | <i>P. panayensis</i> Bellamy |
| 2. | Body robust; transverse elytral rugae deep, entire ... (Catanduanes)..... | <i>P. fisheri</i> (Hoscheck) |
| | Body slender; transverse elytral rugae shallow, only on lateral portion of disc ...(Leyte) | <i>P. gracilis</i> , sp. nov. |

Subtribe *Coraebina* Majer *in* Kubáň, *et al.*, 2001

Genus *Coraebosoma* Obenberger, 1923

Coraebosoma Obenberger, 1923: 198; Bellamy, 1990: 197.

Type species: *Coraebosoma manilense* Obenberger, 1923 (fixed by original designation).

Remarks. The new species described below is presented as a summary diagnostic description. The species of *Coraebosoma* share a number of character states that are clearly definitive at the genus level and needn't be repeated in each species description. Following the revision of the genus *Coraebosoma* (Bellamy, 1990b), only one new species has been added to the genus: *C. mindoroense* Ohmomo, 2002.

Coraebosoma viridis, sp. nov.

(Figs. 3, 6)

Description (♂ holotype). Elongate-ovoid, subcylindrical, flattened above and below, yet feebly transversely convex; maximum length from head to elytral apex: 17.5 mm; maximum width: 6.8 mm, widest at about posterior 1/3 of pronotal length and subequal opposite elytral humeri, L/W (length/width) 2.57; integument of head, pronotum, ventral surface and legs green-aeneous, elytra green with a faint aeneous reflection along anterior margin and on disc medially; entire integument sparsely covered with small, well-separated punctures, each with a single very short, semi-erect seta; frontovertex median depression dorsal to antennal insertions, moderately clothed with recumbent setae; pronotal and elytral discs with no concentrations of setae either in circular patches or fasciae; anterolateral explanate areas of pronotum moderately covered with short recurved setae; ventral surface vestiture: lateral portion of hypomeron, lateral 1/2 of metacoxal plate, at apicolateral angles of abdominal ventrites 1–4; a fringe on ventrites 3–5 moderately covered with recumbent off-white setae; small area on abdominal ventrite 1 feebly depressed, setae slightly more concentrated, apparently to cushion dorsal surface of respective femora; pronotum 1.8 x wide as long; lateral portion of each elytron feebly transversely rugose; lateral margins of elytra subparallel to before apical 1/3; anteromedial portion of pronotal disc strongly convex; elytral apicolateral margins slightly more serrate at separately angulate apices; inner tooth of bifid claw subequal to outer tooth. Male genitalia as in Fig. 6.

Variation. There is no obvious sexual dichromatism or dimorphism. Color in the type series varies from the holotype by having the same, or nearly so, elytral color also on the head and pronotum, although most of the specimens are closer in color to the holotype. The type series varies in size as follows: ♂♂ (n = 15), length 17.5–20.8 mm, width 6.5–7.7 mm, ♀♀ (n = 5), length 18.5–20.5 mm, width 6.9–7.2 mm and unsexed (n = 3), length 17.7–21.0 mm, width 6.3–7.3 mm.

Specimens examined. Holotype, ♂ (CSCA): **PHILIPPINES**, Leyte Is(land), Mt. Balocaue, v.2007, local collector; 20 paratypes: 3 ♂♂, same data as holotype; 2 ♂♂, 1 ♀, 3 unsexed, same data except June–Aug., 2006, D. Mohagan leg.; 2 ♂♂, 1 ♀, Mt. Balocaue, Mahaplag, 5–10.iv.2009, local collector; 1 ♂, Mt. Balocaue, 15–19.vi.2009; 2 ♂♂, Mt. Balocaue, vi.2009; 4 ♂♂, Leyte Is., Mahaplag, Hilusig, Mt. Balocaue, August 2009. Paratypes are deposited in CLBC and COTJ.

Etymology. The name for this species is for the generally all green habitus.

Remarks. This is the second species of *Coraebosoma* that lacks any elytral vestiture in the form of pubescent spots and/or fasciae. As indicated in the key below, it comes nearest to *C. violaceum* Bellamy, which is blue-purple to violet in color, and from Mindanao.

Key to the species of *Coraebosoma* (modified from Bellamy, 1990b: 198)

1. Integument black..... 2
- Integument otherwise colored, if black then with greenish or aeneous reflection 3
2. Anterolateral area of prosternum flattened; black setae covering all portions of upper surface not covered by golden setal patches ... (India) *C. indicum* Bellamy, 1990
- Anterolateral area of prosternum concave, depressed between mentonierre and hypomeron for distal antennomeres in repose; dorsal and ventral surface adorned with regions, spots or fasciae of white or off-white setae, otherwise surfaces glabrous ... (Philippines: Mindoro) *C. mindoroense* Ohmomo, 2002
3. Upper surface without concentrated setal patches and fasciae; color of integument uniform 4
- Upper surface with concentrated patches and fasciae of white to off-white setae; integument black with various shades of green or aeneous reflections 5
4. Violet blue to deep blue with purple reflections ... (Mindanao)..... *C. violaceum* Bellamy, 1990
- Iridescent forest green with aeneous reflections ... (Leyte)..... *C. viridis*, sp. nov.
5. Upper surface bicolorous, head and pronotum colored differently than elytra; setal patches on dorsal surface small, fewer in number 6
- Upper surface more or less unicolorous, ground color of head, pronotum and elytra the same or similar although reflected elytral colors may be different; setal patches on dorsum more extensive, more numerous 8
6. Head, pronotum bright cupreous; elytra brighter green aeneous; more robust, L/W < 2.7 ... (Samar) *C. samarense* Bellamy, 1990
- Dorsal coloration otherwise; more slender, L/W > 2.9 ... (Luzon)..... 7
7. Head, pronotum bluish purple; elytra dark green aeneous *C. manilense* Obenberger, 1923
- Head, pronotum roseocupreous; elytra black with dark red cupreous reflections *C. carteri* Hoscheck, 1931
8. More robust; upper surface feebly green aeneous; each elytron with no more than 5 setal patches and 1 transverse fascia ... (Romblon, Sibuyan)..... *C. sibuyanicum* Bellamy, 1990
- More slender; upper surface darker colored; each elytron with 7 setal patches and 1 transverse fascia 9
9. Green or green blue iridescence quite evident on dorsal surface ... (Negros) *C. negrosianum* Bellamy, 1990
- Color darker, very slight feeble blue iridescence on dorsal surface ... (Panay) *C. panayense* Bellamy, 1990

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